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Suicide in United States Air Force Personnel, 1981–1985

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Five years of epidemiological data on suicide in the U.S. Air Force was compiled. The annual crude suicide rate per 100,000 airmen-at-risk for 1981–1985 was found to be 11.0. Sex-specific, race-specific, age-specific, grade-specific, location-specific, and marital status-specific rates were compared with published data from the U.S. Air Force for the 1958–1964 time period and the differences are noted. Demographic data and information on circumstances surrounding the suicidal act are also presented. Analysis of the suicidal person's psychosocial situation (as reflected in the kinds of personal problems recorded in the reports and investigations of the incident and as reflected in assessment made of the victim's pre-suicidal "motivational state") showed remarkable constancy across the services, and indicates a powerful, consistent association between a dyadic love object relationship in total collapse and the completed suicide.

Introduction

This is a report of the epidemiology of suicide in active duty Air Force personnel in the format previously published in this Journal for the U.S. Army. By describing military suicides in depth, these studies provide a unique description of the suicides in a major segment of the young adult population of the United States.

Prior Air Force data have been reported by Eggersten and Goldstein from 1958 to 1964.[1] Their baseline report characterized the suicides of Air Force personnel as: 1) lower male age-specific rate than for civilians, 2) small arms as the means, 3) risk increasing with age, 4) risk that varies with command and geographic location, 5) higher CONUS rate than OCONUS, 6) smaller race differential than civilians, 7) no difference between officer and enlisted rates, and 8) no monthly or seasonal effect.

Comparable suicide data for the U.S. Army have been published both as a series of reports in two-year intervals—1979–1980,[2] 1981–1982,[3] and 1983–1984[4]—and as a summary of the 1975–1982 data.[5] An extended presentation of the periodic aspects of the suicide rates was included in the latter. Eggersten and Goldstein[1] and the Army both report that the male age-specific rate was lower than for civilians and that small arms were the predominant method. However, those early Air Force findings were not sustained by the recent Army data which found that the risk did not increase with age; that the race differential was about the same as in civilians rather than smaller; that there was considerable difference between officer and enlisted suicide rates; and that there was an apparent monthly and day of week effect.

Among the explanations that may account for the numerous disparities in the reports are the institutional differences between the Army and Air Force or the temporal differences associated with the passage of 22 years. By repeating the analysis of Eggersten and Goldstein[1] on current Air Force and Army data, we will attempt to distinguish the time effects from the inter-service effects.

Method

The Office of Special Investigations, Headquarters, Department of the Air Force investigation file on each death by apparent suicide was used as the primary data source. The files for all deaths were reconciled annually with the official death certificate files maintained by the casualty office, and the suicide list described herein is equivalent to a tabulation of the death certificates with a cause of death of suicide. Selected information from the investigative file was extracted and recorded for later coding and data processing. The age-specific rates for the U.S. population were obtained from the Mortality Branch of the National Center for Health Statistics. The denominators for the demographic-specific rates were formed from the average of the 1981–1985 mid-year strengths provided by the Personnel Section. The marital status-specific denominators for single and divorced/separated/widowed were projected from the observed proportions in fiscal year 1985 (FY85) applied to the nonmarried fraction of the average 1981–1985 population. All rates are expressed on an annual basis. The standard deviation of the rate can be estimated from the rate calculated using the square root of the number of cases.

Results

From January 1, 1981 to December 31, 1985, a total of 322 airmen killed themselves intentionally. The Air Force annual crude suicide rate for the five-year period was found to be 11.0 cases per 100,000 airmen-at-risk. The suicide incidence ranged from 57 in 1981 to 77 in 1985. The annual rates ranged from 9.7 in 1983 to 12.9 in 1985.

The 322 suicides are categorized by sex and by demographic factors in Table 1, and the corresponding rates are also given. The male-to-female rate ratio is 1.8:1. The enlisted-to-officer ratio is 1.9:1. The reader is reminded that the small number of female suicides results in unstable rates.

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The views of the authors do not purport to reflect the position of the Department of the Army, the Department of the Air Force, or the Department of Defense. (para 4-3, AR 360-5)

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TABLE 1

SUICIDE INCIDENCE AND RATE PER 100,000 IN ACTIVE DUTY AIR FORCE PERSONNEL, 1981-1985, BY DEMOGRAPHIC VARIABLES

	Male		Female		Total	
	Incidence	Rate	Incidence	Rate	Incidence	Rate
Total	302	11.6	20	6.3	322	11.0
Race						
White	266	12.4	16	6.3	282	11.7
Black	26	6.9	4	7.6	30	7.0
Other	10	13.2	0		10	11.7
Age						
17-19	23	12.1	2	7.2	25	11.5
20-24	109	12.6	11	8.0	120	11.9
25-29	78	14.3	6	6.0	84	13.0
30-34	29	7.0	0		29	6.4
35-39	42	11.9	0		42	11.5
40-44	18	10.8	1	34.1	19	11.2
45+	4	6.4	0		4	6.2
Grade						
Enlisted	269	12.7	19	7.6	288	12.0
E1	17	16.2	1	6.3	18	14.9
E2	6	5.5	1	5.3	7	5.5
E3	68	14.0	6	7.4	74	13.0
E4	58	13.1	6	6.7	64	12.0
E5	61	13.0	5	8.3	66	12.5
E6	33	12.5	0		33	12.1
E7	17	9.7	0		17	9.6
E8	8	16.8	0		8	16.7
E9	1	4.2	0		1	4.2
Officer	33	6.8	1	1.8	34	6.3

TABLE 2

MARITAL STATUS-SPECIFIC SUICIDE RATES FOR AIR FORCE ACTIVE DUTY ENLISTED PERSONNEL, 1981-1985

	Number	Rate
Single*	128	13.4
Married	112	6.2
Divorced, separated or widowed*	82	62.6
Total	322	11.0

* Based on projected denominators (see text).

TABLE 3

SUICIDE INCIDENCE AND RATE PER 100,000 BY DAY OF WEEK AND MONTH OF YEAR, U.S. AIR FORCE 1981-1985

	Incidence	Rate
Month		
Jan	26	10.4
Feb	26	11.5
Mar	24	9.6
Apr	32	13.3
May	20	8.0
Jun	28	11.6
Jul	33	13.2
Aug	26	10.4
Sep	21	8.7
Oct	25	10.0
Nov	36	14.4
Dec	25	10.0
Day		
Sun	46	11.0
Mon	62	14.8
Tue	42	10.1
Wed	36	8.6
Thu	50	12.0
Fri	34	8.1
Sat	49	11.7

Sex by race rate ratios are as follows: white male-to-black male, 1.8; white female-to-black female, 0.8; white male-to-non-white male, 1.6; white female-to-non-white female, 1.0

The average age for male enlisted suicides was 27 (range 17-48) and for female enlisted suicides was 23 (range 19-28). For male officers, the average age was 33 with a range of 22-53 and age 40 for the sole female officer. Most enlisted suicides for males occurred in grade E3 and for females in grades E3 and E4. There was only one female officer suicide and four black female suicides in 1981-1985. The relative risk of enlisted suicides to officer suicides was 1.9.

Age-specific rates for the 1981-1985 Air Force suicide population were uniformly lower than the age-specific rates for the general U.S. population for 1983. The grade with the highest suicide rate was E8 for men and E5 for women.

Table 2 presents marital status distribution for the enlisted airmen and the marital status-specific rates. Approximately one-third of the suicides were currently married and the highest suicide rate was recorded for the divorced/separated/widowed airmen.

Time of occurrence is shown in Table 3. Suicide was distributed unevenly throughout the days of the week with the highest value on Monday and lowest on Friday.

The method and place of suicide are tabulated in Table 4. Use of a firearm was the most common method employed by males and females. The home (including parental home, family quarters, apartment, and barracks) was the site of suicide for 59% of the cases. The 33 suicides within the major command of USAFE represent an average annual rate of 11.2 per 100,000.

Table 5 is a list of stressful problems, with a tally of the number of cases in whom the specific problem was noted to have existed prior to suicide. The percentages are based upon the 322 persons in whom one or more of the problems had been detected and recorded. Some motivational explanations or problem definitions could be found in every one of the files searched.

The foremost problem is the one labeled "difficulties with love object." When the nature of the relationship problem in the victim-love object dyad is explored (Table 5), marital problems/"can't get along" is the most frequent manifestation, with divorce or other dissolution of the relationship almost as frequent.

Discussion

The annual suicide rate of 11.0 per 100,000 airmen-at-risk was nine-tenths of one point lower than the 1958-1964 rate. A similar, but larger, downward trend has been observed in Army studies. In 1975-1976 the Army annual crude suicide

TABLE 4

PLACE WHERE SUICIDE ACT OCCURRED AND METHOD USED TO COMPLETE SUICIDE, U.S. AIR FORCE SUICIDES 1981–1985

	Number	Per cent
Place		
Home/quarters	159	49.4
Barracks	31	9.6
Friend's home*	13	4.0
Motel/hotel	11	3.4
Jail/hospital	9	2.8
Place of duty	12	3.7
On post, other	12	3.7
Off post, other	75	23.3
Total	322	100.0
Method		
Firearm	195	60.6
Hanging, strangulation	36	11.2
Overdose/poison	21	6.5
Gas (CO, other)	39	12.1
Jump	8	2.5
Drowning	5	1.6
Other	18	5.6
Total	322	100.0

* Including relative's home (not parent).

TABLE 5

NUMBER AND PERCENTAGE OF SUICIDED PERSONS IN WHOM CERTAIN SPECIFIC STRESSFUL PROBLEMS WERE NOTED TO HAVE EXISTED PRIOR TO SUICIDE, U.S. AIR FORCE SUICIDES 1981–1985

Existent Problem	Number	Per cent*
Difficulties with love object	304	94.1
Recent or pending divorce, separation, or breakup	85	30.0
Marital problems/"can't get along"	97	31.9
Altercation with love object just before suicide	53	17.4
Infidelity an issue	42	13.8
History of violence in the relationship	12	3.9
Murdered love object at time of suicide	11	3.6
Attempted to murder love object but failed	4	1.3
Difficulties with job/work/Air Force	109	33.7
AWOL/desertion at time of suicide	11	3.4
In trouble with law (other than AWOL)	37	11.5
Financial problems	49	15.2
Suffering from a psychosis	13	4.0
Medical/health problems (other than psychiatric)	11	3.4
Death of a loved one	7	2.2
Alleged sexual deviation	21	6.5

* Percentages are based on an *N* of 322, i.e., the number of persons with one or more detected stressful problems, or on *N* of 304, i.e., number of persons with one or more detected love object problems.

rate was 16.4; in 1977–1978 it was 14.8; in 1979–1980 it was 11.6; in 1981–1982 (with late reports) it was 11.4, and in 1983–1984 it was 10.0.

The suicide rate per 100,000 women in the Air Force dropped from a figure approximately the same as the male rate (11.9) in 1958–1964 to 6.1. The reduction of almost one-half over the 22 years brings the suicide rate to a value close to equivalent civilian females. The small number of females in the Air Force limits the interpretation of trends because of the statistical instability associated with rates computed from small numbers of suicides. For females in the Army, there was also a reduction from 15.2 in 1977–1978 to a value of 9.9 in 1983–1984.

Age-specific rates for the Air Force male suicides were lower at all age levels studied than the comparable rates for the general U.S. male population. Although the risk increases for the three age categories up to age 30 in both the Army and current Air Force data, the suicide risk does not increase beyond that age as it did in the 1958–1964 Air Force data and as it currently does for the U.S. male population.

The highest grade-specific risk for suicide occurs at grade E8 and grade E1. Grade E1 is typically held for the first three months of service prior to the start of the airman's duty assignment. This period is a time of transition with the anticipation of pass/fail training assessments and imminent relocation, with attendant separations and disrupted personal relationships. Grade E8 is typically the culmination of an enlisted career and these suicides appear to be related to the anticipated life changes at the completion of service. In some cases it was not the pending retirement itself but a threatened bar to reenlistment which would prevent completion of the pension-qualifying 20 years of service. The hypothesis that this psychosocial stress of transition is the "cause" of the individual suicides follows, but the file does not contain the information to allow a test of the hypothesis.

The place where the act occurred was similar in the Air Force and Army data. The similarity of the USAF and USAFE rate is distinctly different from the previous finding of Eggersten and Goldstein[1] of lower rates for commands located outside of the continental United States or the Army finding of a lower suicide rate in Europe. The cause of this current suicide rate differential between the services or the change within the Air Force over time is not immediately apparent and warrants further investigation.

The Monday peak and Friday minimum in Air Force suicides is the same as the Monday peak and Friday minimum seen in both the Army and civilian data. The variable pattern across the months of the year (with peaks in April, July, and November) was distinctly different from the June and January peak pattern of the previous Army data. The spring (May) and fall (October) peaks found in the United States Vital Statistics are not found in our data, although the Monday peak is present as it is in both the Army and civilian data.

Summary

Epidemiological data on suicide in the United States Air Force was compiled with the same method as was used previously. The annual crude suicide rate per 100,000 airmen-at-

risk for 1981–1985 was found to be 11.0, a drop of nine-tenths of one point from where it stood in 1958–1964.

Sex-specific, race-specific, age-specific, grade-specific, and marital status-specific rates were studied and compared with the same indices in the 1958–1964 Air Force report. Major changes were found in the age-specific, CONUS-to-OCONUS pattern, and officer-to-enlisted ratio patterns. Demographic data and information on circumstances surrounding the suicidal act were also made available for comparison with previous Army data.

Analysis of the suicided person's psychosocial situation (as reflected in the kinds of personal problems recorded in the reports and investigations of the incident and as reflected in assessments made of the victim's pre-suicidal "motivational state") showed remarkable consistency with the Army reports and, as stated previously, points unflinchingly to a love object dyadic relationship at total collapse.

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